Work Ord September-05-1		-		*124	4025*						-	Page 1
Item ID: Revision ID: Item Name:	D3490-1 Cross Bolt S _I	pacer		Accept	*N900) <u>04</u> (110	N *	Setup	Start Stop		S1*
Start Date: Required Date: Reference:	9/05/14 9/05/14	Start Qty: 80.00 Req'd Qty: 80.00	()\ /		Cust Item Customer:						"N	S2*
Approvals:	Process Pla	an: _ <i>M L 3</i> 7	Date: 14-09-05	Tooling:	D	ate:			Run	Start	*N	R1*
	QC:	-	Date:	SPC (Y/N):	D	ate:				Stop	*N	R2*
Sequence ID/ Work Center II)	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	t Rejec		Reject Number	Insp. Stamp
Draw Nbr	Rev	vision Nbr										
D3490	Rev	' A										BAÇ
*100 *100*		Hardinge CNC LATHE	SMALL	0.00					<i>\$</i>	 S		37 14.09.08
Hardinge CNC Lathe	: Small	FOLIO RE' DWG REV	S PER FOLIO FA628 & DWC V: ### : ### R AS REQUIRED	0.00 G D3490					- - Y			
110		QC2- Inspect parts off n	nachine FAI/FAIB	0.00							D/ 3	AS
110 QC Quality Control		Мето	·	0.00				80	Ø	/ 	94	
		÷										
120		QC8- Inspect parts - seco	ond check.	0.00				0 -		,		DAS 40
1 20 QC Quality Control		Memo		0.00				_80	9	<u> </u>		2.89 14/09/11

DQA:		Date:											
					WORK ORDER NON-	·CC	NFO	RMANCE / U	PDATE			AEROSPACE	
QA Closed:		Date:					1 (1)	. del	W	ork Order up	date only		
					DISPOSITION		· V.		AGAINST DE	PARTMENT,	/PROCESS		
Work Order	:				p		•	المطابع لمنادي	Crosstube	}	Engineering		
0					Rework			Skid-tube Machining	Small Fab	Dro	Water Jet d. Eng. Coor.	Quality	
Part No)				Scrap Use-as-is			noforming	Finishing		re/Packaging	Other	
NCR No	,			•	Suspected Unapproved			Large Fab	Composite	1100,0101	Supplier		
iventio	,			·				8		J			
Root				Desc	ription of work order update	1	nitial	Act	tion	Sign & Date		•	
Cause	Date	Step	Qty		or non-conformance	Ch	ief Eng	Desci	ription	Date	Verification	QC Inspector	
Design													
Doc/Data										·			
Equip/Tooling	_												
Handling/Pre	4												
Material											,		
Operator	<u> </u>												
Offset/Setup	<u>e -9</u>	ŀ.							**	4,			
Process	_												
Supplier Training	-								200				
Transport	=			İ					** .				
Unapproved	7									<u> </u>			
г °,	- 5¢ .					FA	ULT CA	TEGORY					
Landing	g Gear	eli.			General		•		St	٦	<u></u>	_	
	Bending				Bend	_	4	Program		Outside Dim	<u> </u>	Pressure/Forced	
	Centre N	ot Conce	ntric	<u> </u>	BOM/Route	*	Grain			Over/Under	 	Set-up	
	Cracks	•			Broken/Damage/Defect		Hardwa			Part Incorre		Temperature/Cure	
ļ. <u>.</u>	Crimp/Ki	nk/Ripple	e/Wave		Burrs	_	4	ion Incomplete/U		Part Lost/M	- I	Weld	
	Cuffs			_	Contamination		4	tions Incomplete/		Part Moved	_	Wrong Stock Pulled	
. -	Crushing			<u> </u>	Countersink	-	-1	gned/off center		Positioned \ Power Loss/		Other	
-	Heat Trea			<u> </u>	Cut Too Short	\vdash	Mislab Misrea		. <u>L</u>	Trower ross/	Juige	Totilei	
-	Inspectio		iupe	 	Drawing Drill Holes	-	Off-set		of a second second				
-	Marks/Cl Turning \$			-	Finish	\vdash	4	Calibration		in many and a			
-	Wave/Tv	4.3.75			Fit/Function	-	-	Sequence	_ * ***				

Work Ord					148		Page 2					
Item ID: Revision ID: Item Name:	D3490-1 Cross Bolt S	Spacer		Accept	*N900	<u>04</u> 0	10	100*		Start Stop	!/	S1*
Start Date: Required Date Reference:	9/05/14 : 9/05/14	Start Qty: 80.00 Req'd Qty: 80.00	*80* *80*		Cust Item 1 Customer:	D:				•	^IVI	S2*
Approvals:	Process P	lan:	Date:	Tooling: SPC (Y/N):	Date:				Run	Start Stop		R1* R2*
Sequence ID/ Work Center II	D	Operation Description Identify as per dwg & Stor	ck Location:	Set Up/ Run Hours	Tool ID	Tool#	Plan Code	Accept Qty	Rej Qty		Reject Number	Insp. Stamp
120 Packaging Packaging		Memo CLEAN CRO	SSBOLT SPACER WITH	0.00	NER			80		Ø c	BEI	4-09-14
140		***STOCK IN QC21- Final Inspection - V	N SKIDTUBE CELL*** Vork Order Release	0.00						, 1	1	iA.

0.00

140

Quality Control

Memo

W14-9-16

DQA:			Date:			•			_					TRAC"
						WORK ORDER NON-	-CC	ONFO	RMANCE / UI					AEROSPACE
QA Closed:			Date:								Work	Order up	date only	
Work Ord	~					DISPOSITION				AGAINST I	DEPA	RTMENT	PROCESS	
WORK Orui	٥.					Rework	1		Skid-tube	Crosstube	7		Water Jet	Engineering
Part N	No.					Scrap			Machining	Small Fab		Proc	d. Eng. Coor.	Quality
						Use-as-is			moforming	Finishing		Rec/Stor	e/Packaging	Other
NCR I	١٥.					Suspected Unapproved			Large Fab	Composite			Supplier	
								· ·						
Root					Desci	ription of work order update	l	nitial		ion		Sign &		
Cause		Date	Step	Qty		or non-conformance	Ch	ief Eng	Descr	ription		Date	Verification	QC Inspector
Design														
Doc/Data														
Equip/Tooling														
Handling/Pre							İ							
Material -			i .											
Operator	\vdash						İ							
Offset/Setup					f									
Process	 	1												
Supplier	_													
Training Transport	_	}												
Unapproved														
опаррточеа	L	l	<u> </u>		<u> </u>		FA	ULT CA	TEGORY				·····	
Landi	ng (Gear				General								
	Ť	Bending				Bend	Г	Folio/I	Program			utside Dim	ensions	Pressure/Forced
		Centre N	ot Concer	ntric		BOM/Route		Grain			O	ver/Under	tolerance	Set-up
		Cracks				Broken/Damage/Defect		Hardwa	are		Pa	art Incorrec	ci [Temperature/Cure
		Crimp/Kii	nk/Ripple	/Wave		Burrs		Inspect	tion Incomplete/U	nqualified	Pa	art Lost/Mi	ssing	Weld
		Cuffs				Contamination		Instruc	tions Incomplete/I	Unclear	∐ Pa	art Moved	L	Wrong Stock Pulled
		Crushing				Countersink		Misali	gned/off center			ositioned V		
		Heat Trea	at			Cut Too Short		Mislab	eled		∐_P¢	ower Loss/	Surge	Other
		Inspectio	n Strip in	Tube		Drawing		Misrea	d					
		Marks/Cl	hatter			Drill Holes		Off-set			_			
1		Turning S	Sequence			Finish	L	Out of	Calibration					
	1	Wave/Tw	vist in Tul	ре		Fit/Function		Out of	Sequence					

Picklist Print

September-05-14 2:25:48 PM

Work Order ID: 124025

124025

Parent Item:

D3490-1

D3490-1

Parent Item Name: Cross Bolt Spacer

Start Date: 9/05/14

Required Date: 9/05/14

Start Qty: 80.00

Required Qty: 80.00

Comments:

IPP Rev:A New Issue 06-03-03 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6T0.500W.049		Purchased	No			100	f	103.0000	0.266				DAS
M6061T6 6061-T6 RD Tube .500 x.04		W 049					•	105.0000	**	23	14	09.08	37 9-89

Location	Loc Oty	Loc Code	
MAT014	103		
m126335	14		
m129188	89		23 9t.

Page 1

DQA:		Date:	,			"DART							
					WORK ORDER NON-	-CC	ONFO	RMANCE / UI					AEROSPACE
QA Closed:		Date:								WC	ork Order up	date only	
Work Orde					DISPOSITION				AGAINST	DE	PARTMENT	PROCESS	
Work Orde	·				Rework			Skid-tube	Crosstube			Water Jet	Engineering
Part N	о.				Scrap			Machining	Small Fab	-	Pro	d. Eng. Coor.	Quality
					Use-as-is		Thern	noforming	Finishing		Rec/Stor	e/Packaging	Other
NCR N	lo	•••			Suspected Unapproved			Large Fab	Composite			Supplier	
		Ī	1		intimate and a second at a		-itial	Act	ion		Sign &		
Root				Desci	ription of work order update	1	nitial		ription		Date	Verification	QC Inspector
Cause	Dat	e Step	Qty	ļ	or non-conformance	<u>Cn</u>	ief Eng	Desci	iption		Date	Vermeation	Qe mspector
Design 😘-					'								
Doc/Data Equip/Tooling													
Handling/Pre	_												
Material	\dashv												
Operator						1							
Offset/Setup													
Process	_	i.											
Supplier	\neg												·
Training				1									
Transport													
Unapproved													
***						FA	ULT CA	TEGORY	<u></u>				
Landir	ng Gear				General		1 .				1 .	. —	ا ا
	Bendi	•			Bend		1	Program		<u> </u>	Outside Dim	 	Pressure/Forced
	_	e Not Conce	entric		BOM/Route	<u> </u>	Grain			<u> </u>	Over/Under		Set-up
ļ	Crack			ļ	Broken/Damage/Defect	<u></u>	Hardwa		11.61		Part Incorred		Temperature/Cure
ļ		/Kink/Rippl	e/Wave	<u> </u>	Burrs	\vdash	4 '	ion Incomplete/Ui		_	Part Lost/Mi	issing _	Weld
	Cuffs				Contamination	-	4	tions Incomplete/l	unclear	-	Part Moved	L- Vrong	Wrong Stock Pulled
	Crush	-		<u> </u>	Countersink	\vdash	- 4	gned/off center		\vdash	Positioned V Power Loss/	_	Other
	Heat		- '		Cut Too Short	\vdash	Mislabe				Jeower Loss/	onige	Joulei
		ction Strip in	n∣ube	-	Drawing	-	Misrea						
	_	s/Chatter	_	-	Drill Holes	\vdash	Off-set	Calibration					
		ng Sequence /Twist in Tu		 	Finish Fit/Function	-	4	Sequence					
	vvave	y i wist in Tu	ine .		riy runcuon	<u>i</u>	Journ	sequence	·				

DART AEROSPACE LTD	Work Order:	124025
Description: Crossbolt Spacer	Part Number:	D3490-1
Inspection Dwg: D3490 Rev: A		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X	First Article		Prototype
---	---------------	--	-----------

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.500	+0.006/-0.001	003.	~		DR 16	& sem
0.049	+/-0.010	.049	_		.1	1
Ø0.402	+0.006/-0.001	.407	~			
3.085	+0.030/-0.000	3.693	~			
0.050 x 45°	+/-0.010	·080×45				l
			-			
			· · · · · · · · · · · · · · · · · · ·			
,						
·						

	DAS		DA	8		

Measured by: 9-89

Date: 14-09-08

Audited by: 9-69

Date: 14-09-08

Date: 14-09-08

Prototype Approval: N/A

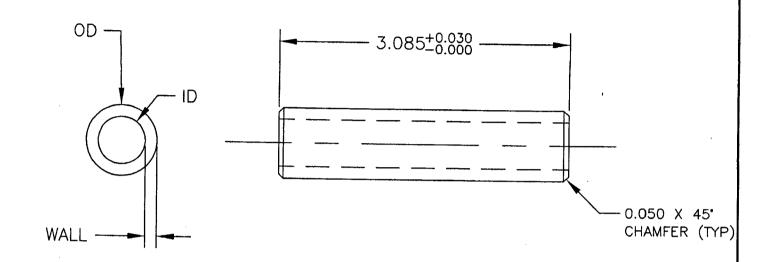
Date: N/A

Rev	Date	Change	Revised by	Approved
Α	06.10.06	New Issue	KJ/JLM	
В	08.06.02	Dimensions and tolerances revised	KJ/DD 1.0	
С	08.10.07	0.050 x 45° dimension revised	KJ/DD 🛠	17/

DQA:			Date:					TART					
OA Clasadi			Date:			WORK ORDER NON-	·CC	ONFO	RMANCE / UPDA		ork Order up	date only	AEROSPACE
QA Closed:	_		Date.							* ***		· · · · · · · · · · · · · · · · · · ·	
Work Orde	٠r٠				1	DISPOSITION			AC	GAINST DE	PARTMENT/	PROCESS	
Work orac	-					Rework			Skid-tube Cro	osstube		Water Jet	Engineering
Part N	lo.					Scrap		1	Machining Sm	nall Fab	Prod	d. Eng. Coor.	Quality
	-					Use-as-is		Thern	noforming Fi	inishing	Rec/Stor	e/Packaging	Other
NCR N	۱٥					Suspected Unapproved			Large Fab Con	mposite		Supplier	
D	1		Τ	1	Doss	ription of work order update		nitial	Action		Sign &		
Root Cause	Į	Date	Step	Qty	Desci	or non-conformance		iief Eng	Description	า	Date	Verification	QC Inspector
Design	\dashv	Date	Step	Qty		of non-comormance	<u> </u>	iici Eiig	Везеприот	<u> </u>	5415		До тороссо.
Doc/Data	\dashv												
Equip/Tooling	T										·		
Handling/Pre	\Box												
Material	\neg												
Operator			· ·	1									
Offset/Setup													
Process			i i								ر جهار		
Supplier											383		
Training			ļ .										·
Transport													
Unapproved			1	<u> </u>			<u> </u>						
							FA	ULT CA	regory				
Landi	$\overline{}$					General	_	1			1		٦. ،
	\vdash	Bending			<u> </u>	Bend	<u> </u>		Program		Outside Dim		Pressure/Forced
	_	Centre N	ot Conce	ntric		BOM/Route		Grain		H	Over/Under	}	Set-up
		Cracks			-	Broken/Damage/Defect	<u> </u>	Hardwa		E: - J	Part Incorred		Temperature/Cure Weld
	_	Crimp/Ki	nk/Ripple	e/Wave	-	Burrs	\vdash	1 '	ion Incomplete/Unqualif		Part Lost/Mi Part Moved	-	Wrong Stock Pulled
	-	Cuffs			 	Countarion	⊢	4	tions Incomplete/Unclea gned/off center	"	Positioned V	/rong	Antonia Stock Lanea
	-	Crushing			<u> </u>	Countersink Cut Too Short	\vdash	Mislabe		<u></u>	Positioned V		Other
	├	Heat Trea		Tubo	-	Drawing	-	Misrea		L	1. 04461 5033/		10 their
	-	Inspectio Marks/Cl	•	iiube		Drill Holes	\vdash	Off-set					
	-	Turning S		.	-	Finish		4	Calibration				·
	\vdash	Wave/Tv	•			Fit/Function		4	Sequence				
Ī	í	1 - + 4 + 6 / 1 4	u			1,							



	DESIG	PH	DRAWN BY	DART AEROSPACE USA, INC	
	CHEC	KED #	APPROVED	D3490 REET 1	V. A OF 1
ı	DATE			TITLE S	CALE
┙	06.0	1.04		CROSS BOLT SPACER	NTS
	Α		06.01.04	NEW ISSUE	



D3490-1/-3/-5 CROSS BOLT SPACER PARTS LIST

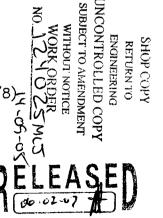
PART NUMBER	OD	WALL	ID (REF)	MATERIAL SPEC			
D3490-1	0.500	0.049	0.402	M6061T6T0.500W.049			
D3490-3	0.750	0.080	0.591	M6061T6R0.750			
D3490-5	0.313	0.058	0.197	M6061T6T0.313W.058			

D3490-1/-3/-5 CROSS BOLT SPACER

ALUMINUM 6061-T6 (QQ-A-200/8 OR QQ-A-225/8) 1)

2) ALL DIMENSIONS ARE IN INCHES

TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED



Copyright © 2006 by DART AEROSPACE USA, INC.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

DQA:		Date:			WORK OPDER NON-CONFORMANCE / LIPDATE							"DART	
QA Closed: Date:			_	WORK ORDER NON-CONFORMANCE / UPDATE Work Order update only							AEROSPACE		
						DISPOSITION							
Work Orde	er: -					Danisadi C		Skid-tube	Crosstube Water Jet		Water Jet	Engineering	
D. A.M.						Rework Scrap		Machining Small Fab			Prod. Eng. Coor.		Quality
Part No.						, , , , , , , , , , , , , , , , , , , 			Thermoforming Finishing			e/Packaging	Other
NCR No.						Suspected Unapproved		Large Fab Composite			Supplier		
	-								· L-		<u> </u>	· • • • • • • • • • • • • • • • • • • •	
Root					Desci	ription of work order update	ı	nitial	Act	ion	Sign &		
Cause		Date	Step	Qty		or non-conformance	Ch	ief Eng	Descr	iption	Date	Verification	QC Inspector
Design				,									·
Doc/Data .						,							
Equip/Tooling											;		
Handling/Pre		**											
Material													
Operator													,
Offset/Setup											,		
Process				٠.			ĺ						
Supplier							1						
Training	`		ł				l						
Transport	Щ						•						
Unapproved			<u> </u>		<u> </u>		<u> </u>						
							FA	ULT CA	regory				
Landi	$\overline{}$	ř.			<u> </u>	General		1- 11 /5					7]p/p/
	-	Bending			\vdash	 		Folio/Program		Outside Dimensions		Pressure/Forced	
	-	Centre Not Concentric			-	BOM/Route		Grain		Over/Under tolerance		Set-up	
	_				_	Broken/Damage/Defect		Hardware			Part Incorrect		Temperature/Cure Weld
	Crimp/Kink/Ripple/Wave				-	-		Inspection Incomplete/Unqualified		-			
		Cuffs			<u> </u>	4 · H		-1 .	' ' 				Wrong Stock Pulled
	├	Crushing			<u> </u>	Countersink			gned/off center		Positioned Wrong		Other
	<u> </u>	Heat Treat				Cut Too Short	H .		Aistabeled Power Loss/Surge			Other	
	Inspection Strip in Tube			Tube	Drawing	\vdash	Misread						
	Marks/Chatter Drill Holes				Off-set Out of Calibration								
				Finish Fit /Function	\vdash	-			-				
			Fit/Function Out of Sequence										